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10/598,334	08/24/2006	Leon Thomas Lee Marsh	78104113/N19108	2747

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EXAMINER

DOUGHERTY, SEAN PATRICK

ART UNIT	PAPER NUMBER
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3736

NOTIFICATION DATE	DELIVERY MODE
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11/26/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/598,334	Applicant(s) MARSH, LEON THOMAS LEE	
	Examiner SEAN P. DOUGHERTY	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 19-22 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19-22 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/03/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the FINAL Office action based on the 10/598334 application filed 08/24/2006.

Response to Amendment

The amendment(s) filed 09/03/2010 by the Applicant in response to the previous Office action mailed 03/03/2010 have been considered by the Examiner. The Examiner acknowledges claims 1-15, 19-22 and 26-28 includes amended claims 14 and 19, new claims 26-28 and cancelled claims 16-18 and 23-25.

The rejection of claims 1-15 and 19-25 under 35 U.S.C., first paragraph (new claims 26-28 are also rejected under 35 U.S.C., first paragraph) are maintained, the rejection of claims 14 and 15 under 35 U.S.C. 101 are maintained, the rejection of claims 1-15 and 19-22 as being anticipated by Fraden in view of Buono are maintained (new claims 26-28 are also rejected as being anticipated by Fraden in view of Buono). The rejection of claim 14, 15 and 19 under 35 U.S.C., second paragraph are withdrawn in response to the amendments and the rejection of claims 19-22 and 25 under 35 U.S.C. 101 are withdrawn in response to the amendments.

The Applicant's amendments have overcome the 35 U.S.C. 112 first paragraph rejection of claim 18 in the previous Office action.

The rejection(s) in the previous Office action of the claim(s), specifically in regards to the 35 U.S.C. 112 first and second paragraph rejections are maintained and

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expanded upon, below. The rejection(s) in the previous Office action of the claim(s), specifically in regards to the previously applied prior art are maintained below:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15 and 19-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-15, 19-22 and 26-28 are rejected as the adequacy of the disclosure to enable a person of ordinary skill in the art to make and use the claimed invention is questioned by Examiner. Any person skilled in the art could not make and use the invention without undue experimentation. In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988). See also United States v. Teletronics, Inc., 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988).

The "formula" at para. 62 of the printed publication of the instant applicant is called into question by the Examiner. Specifically, the formula requirement of a "factor of ambient compensation" is called into question by the Examiner.

The disclosure of the instant applicant suggests at para. 64 that the “factor of ambient compensation is valued between 0.1 and 0.23 degrees centigrade, and refers to the increase in the subjects core body temperature for every percent loss of body weight, in temperate and hot climates respectively” and suggests at para. 43 “the factor of ambient compensation may be between 0.1 and 0.23 and is determined in dependence on the temperature of the environment surrounding the subject”.

It is important to note this is the only written explanation of the “factor of ambient compensation”.

The “factor of ambient compensation” is deemed simply a mythical number by the Examiner because it is beyond routine experimentation for one of ordinary skill in the art to determine how the factor is chosen. The logic behind exactly how the number is chosen is non-existent in the specification.

As stated above, the specification suggests that the “factor of ambient compensation is valued between 0.1 and 0.23 degrees centigrade” where the bounds of the factor of ambient compensation in centigrade are presented. The specification goes on to suggest the factor of ambient compensation “refers to the increase in the subjects core body temperature for every percent loss of body weight”. However, how this reference is made is non-existent in the disclosure. The disclosure lacks *how a reference is made*. By simply stating a reference is made, a skilled artisan would be required to perform undue experimentation to determine *how the reference is made*.

Similarly, the specification suggests that the “factor of ambient compensation may be between 0.1 and 0.23” where the bounds of the factor of ambient compensation

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are presented, without corresponding to any particular unit type. The specification goes on to suggest the factor of ambient compensation “is determined in dependence on the temperature of the environment surrounding the subject”. However, how the determination is made and how the determination depends on the temperature of the environment surrounding the subject is non-existent in the disclosure. The disclosure lacks *how the determination is made and how the determination depends on the temperature of the environment surrounding the subject*. By simply stating a determination is made and that the determination depends on a temperature, a skilled artisan would be required to perform undue experimentation to determine *how the determination is made and how the determination depends on the temperature of the environment surrounding the subject*.

In summary, the disclosure of the instant application fails to enable how the factor of ambient compensation works or how it is chosen, therefore, it is beyond routine experimentation of one of ordinary skill in the art and a skilled artisan would not be able to make use of the invention. Adequate examples of precisely what the “factor of ambient compensation is”, how the fact works and/or how it is chosen is not disclosed in the specification. Therefore, the “factor of ambient compensation” is not enabled by the original disclosure.

Claims 19-22 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

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possession of the claimed invention. The Examiner notes that the Applicant was not in possession of hydration monitoring “without reliance on any measured electrical properties of the subject’s body” as set forth in claim 19. The Examiner notes any negative limitation or exclusionary proviso must have basis in the original disclosure. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977). The mere absence of a positive recitation is not basis for an exclusion. Claim 19 does not have basis in the original disclosure and is being rejected for failing to comply with the written description requirement.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner notes that the Applicant was not in possession “only” obtaining measurements from the subject by an earpiece. The Examiner notes any negative limitation or exclusionary proviso must have basis in the original disclosure. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977). The mere absence of a positive recitation is not basis for an exclusion. Claim 21 does not have basis in the original disclosure and is being rejected for failing to comply with the written description requirement.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 14 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 14 and 15 are drawn to process claims. The claims do not require that the process be implemented by a particular machine nor does the claim require that the method particularly transforms a particular article. Claim 14 recites calculations that are not implemented by a machine and could be performed mentally – the mental implementation could be performed by a person who could be considered the "hydration monitor". Therefore, the process is not eligible subject matter because it is directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 1-12, 14, 15, 19-22, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5 to 7,306,565 to Fraden et al. (hereinafter "Fraden") in view of the publication titled "Effect of hypohydration on core temperature during exercise in temperate and hot environments" by Buono et al. (hereinafter "Buono").

Regarding claims 1-12, 14, 15 and 19-22, Fraden discloses a portable monitor comprising:

- a temperature sensor (5) configured to measure a subject's core body temperature and a processor (17), the processor being arranged to accept measurements from the temperature sensor (col. 1, ll. 23-24);
- an earpiece (4/6) worn on the ear and a remote unit (16), the temperature sensor being positioned in the earpiece for measuring the core body temperature via the subject's tympanic membrane (see Figure 1);
- where the temperature sensor comprises a thermopile (col. 4, ll. 4);
- where the earpiece further comprises a transmitter (col. 4, ll. 27), the remote unit including the processor (17), output means (19) and a receiver (23), the earpiece being arranged to communicate measurements to the processor via the transmitter and receiver;
- where the transmitter and receiver communicate wirelessly (26);
- where the transmitter and receiver are transceivers as demonstrated by wireless signal (26);
- where the remote unit comprises a monitoring apparatus (16);
- where the output means includes one or more of a display (19) and a speaker;

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- arranged to operate repeatedly at predetermined intervals (“continuous” col. 1, ll. 23), the Examiner notes that continuous monitoring a predetermined interval;
- where the processor is arranged to generate an alarm, note that display (19) may be considered an alarm, as it is capable of alerting a user when core body temperature is not in an ideal range;
- Fraden does not expressly disclose a memory for storing core body temperature, however, a skilled artisan would have found it obvious that processor (17) contains a memory for storing core body temperature, as computation of core body temperature would require a memory of some capacity to perform computation.

Fraden discloses the claimed invention as set forth and cited above except for where a hydration level is calculated by the processor in dependence on changes in the measured core body temperature, a processor being arranged to provide an indication of the hydration level via the output means, nor the steps of measuring an initial core body temperature of the subject, measuring a subsequent current core body temperature of the subject, subtracting the initial core body temperature from the subsequent core body temperature, thereby obtaining a difference, multiplying the difference by the subject's weight, thereby obtaining a multiplied difference, dividing the multiplied difference by a factor of ambient compensation, and multiplying the factor of ambient compensation by 100, thereby obtaining an indication of the subject's hydration level, where the factor of ambient compensation is between 0.1 and 0.23 and is

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determined in dependence on the temperature of the environment surrounding the subjection.

Buono is a reference that teaches hydration monitoring using a temperature sensor (Materials and methods: "sterile rectal probe") for measuring a subject's core body temperature (Materials and methods: "measure rectal temperature (T_{re})") and accepting measurements from the temperature sensor and calculating a hydration level (Abstract: "Hypohydration increased T_{re} significantly ($P < 0.05$) more in the hot environment ($0.16\text{ }^{\circ}\text{C}$ per 1% decrease in body mass) than in the temperate environment ($0.08\text{ }^{\circ}\text{C}$ per 1% hypohydration)") in dependence on changes in the measured core body temperature (Results, see T_{re} section). Buoni teaches that temperature is indicative of hydration, therefore, the processor of Fraden, by simply displaying the temperature of the subject via display (19) is an indication of the hydration level. Buono teaches detecting changes in body temperature (Results, see T_{re} section), therefore, Buono teaches measuring an initial core body temperature of the subject, measuring a subsequent current core body temperature of the subject, subtracting the initial core body temperature from the subsequent core body temperature, thereby obtaining a difference. Buono teaches a factor of ambient compensation between 0.1 and 0.23 (" $0.16\text{ }^{\circ}\text{C}$ per 1% decrease in body mass"). Buoni teaches measuring a subject's weight (Materials and methods: "the subject's were weighed"). While Buono does not expressly disclose, multiplying the difference by the subject's weight, thereby obtaining a multiplied difference, dividing the multiplied difference by a factor of ambient compensation, and multiplying the factor of ambient

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compensation by 100, Buoni nonetheless uses similar factors ("the difference", "subject's weight") to achieve the same result of determining a hydration level based on core temperature measurements. It would have been an obvious matter of design choice to create the equation for determining hydration level as stated in the claims, since the prior art of Buono utilizes similar factors to achieve the same result - it appears the invention of Buono would perform equally as well for determining hydration level using temperature factors.

One having an ordinary skill in the art at the time the invention was made would have found it obvious to modify the temperature sensor of Fraden to employ the hydration monitoring of Buoni because Fraden teaches measuring core temperature using the ear temperature sensor would cause less discomfort and can remain in the ear for a long period of time for continuously monitoring core temperature (col. 2, ll. 25-27). A skilled artisan at the time the invention was made would have found an ear piece more comfortable than a rectal probe and more capable of continuous use for temperature, and thus, hydration monitoring. Therefore, a skilled artisan would have found the combination of references obvious.

Regarding claims 26 and 27, Fraden discloses a portable hydration monitor including:

- a wearable temperature sensor (5) having:
 - an earpiece worn on the ear as best seen in Figure 5 for measuring a subject's core body temperature via the subject's tympanic membrane,

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- where the earpiece includes one channel to allow ambient flow around the subject's ear canal – note the “fork” configuration provides a channel between the fork for ambient flow around the subject's ear; and
- a transmitter (col. 4, ll. 27) configured to communicate the measured core body temperature; and
- a remote unit (16) to be carried or worn by the subject and including a receiver (23) configured to receive the communicated core body temperature from the transmitter and communicate the received core body temperature to the processor, a processor (17), and an output device (19);
- where the processor is configured to calculate the subjects core temperature in real time via the signal processor 17 and caused an indication of the core temperature via the display 19.

Fraden discloses the claimed invention as set forth above except for where the processor is configured to calculate the subject's hydration level from the measured core body temperature in substantially real time, and cause an indication of the hydration level to be output via the output device. Buono is a reference that teaches hydration monitoring using a temperature sensor (Materials and methods: “sterile rectal probe”) for measuring a subject's core body temperature (Materials and methods: “measure rectal temperature (T_{re})”) and accepting measurements from the temperature sensor and calculating a hydration level (Abstract: “Hypohydration increased T_{re} significantly ($P<0.05$) more in the hot environment ($0.16\text{ }^{\circ}\text{C}$ per 1% decrease in body

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mass) than in the temperate environment (0.08 °C per 1% hypohydration)”) in dependence on changes in the measured core body temperature (Results, see T_{re} section). Buoni teaches that temperature is indicative of hydration, therefore, the processor of Fraden, by simply displaying the temperature of the subject via display (19) is an indication of the hydration level. One having an ordinary skill in the art at the time the invention was made would have found it obvious to modify the temperature sensor of Fraden to employ the hydration monitoring of Buoni and specifically the relation between temperature and hydration levels because Fraden teaches measuring core temperature using the ear temperature sensor would cause less discomfort and can remain in the ear for a long period of time for continuously monitoring core temperature (col. 2, ll. 25-27) and Buoni teaches a relation between temperature and hydration. A skilled artisan at the time the invention was made would have found an ear piece more comfortable than a rectal probe and more capable of continuous use for temperature, and thus, hydration monitoring. Therefore, a skilled artisan would have found the combination of references obvious.

Claims 13 and 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5 to 7,306,565 to Fraden as modified by Buono, as applied to claim 1 above, and further in view of US 6,138,079 to Putnam.

Fraden as modified by Buono discloses the claimed invention as set forth and cited above except for where the processor is arranged to generate an alarm via a sound generator upon determination of a hydration level below a predetermined level.

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Putnam is a reference that teaches an alarm that generates upon determination of a hydration level below a predetermined level (col. 3, ll. 22-27). One having an ordinary skill in the art at the time the invention was made would have found it obvious to modify the processor or Fraden as modified by Buono to include the capability of generating an alarm when a hydration level is below a predetermined level, because Putnam teaches at col. 1, ll. 8-9 that the alarm would provide athletes with information regarding effects of their exercise. Therefore, a skilled artisan would have found the combination of references obvious.

Response to Arguments

The Applicant's arguments filed 09/03/2010 have been fully considered by the Examiner, below:

The Applicant argues the 35 U.S.C. 112, first paragraph rejection of claims 1-15 and 19-25 at pages 7-11 of the arguments. The Applicant argues that the Examiner's rejection "assumes an extraordinarily unskilled artisan incapable of simple problem-solving, and is clearly false" and states that the "factor of ambient compensation is merely a constant scaling factor used to scale output to a preferred numerical output range". The Examiner disagrees and respectfully submits that the Examiner is assuming a skilled artisan. The basis of rejection lies with the Applicant's failure to adequately disclose the "factor of ambient compensation". The Applicant attempts to remedy the failure of describing the "factor of ambient compensation" by further attempting to define the factor in the arguments. The "factor of ambient compensation" is argued as a

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“scaling factor” to “scale the output to a preferred numerical output range”, however, the Examiner notes such statements do not have basis in the disclosure because such statements are not recited in the disclosure nor would a skilled artisan make such conclusion when viewing the equation at para. 63 of the disclosure. Not only does the disclosure fail to describe how the factor is chosen, the disclosure fails to clearly disclose *why the factor is chosen*. From the written description and equation, a skilled artisan would be unable to determine what such factor is and how it is used without undue experimentation to make and/or use the claimed invention. Even with such factor shown in the disclosed equation, a skilled artisan would not assume that such factor is used as a “scaling factor”. Such number could be one of many possibilities. To a skilled artisan, the “factor of ambient compensation” would appear to be an arbitrary number as explanation of how such number is chosen, used, and how the number is useful is non-existent in the disclosure.

The Applicant argues the 35 U.S.C. 112, first paragraph rejections of claims 19-22 at pages 13-14. The Applicant argues that the Applicant was in possession of the “without reliance on any measured electrical properties of the subject’s body”. The Examiner respectfully disagrees and argues the Applicant’s arguments are flawed because: (1) such negative limitation has not be explicitly written in the claims – the specification states the thermopile detects infrared radiation but the specification does not state by what means the thermopile acts, (2) infrared radiation is merely heat and there are known temperature sensors that use electrical properties of the body (impedance) to determine the temperature of the body, thus, the negative limitation

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cannot be assumed from the disclosure and (3) the body functions and is enabled by electricity, therefore, generally any reading of the body, including the temperature of the human body has it's basis in the electrical properties of the body, therefore, a temperature measurement by a thermopile detecting infrared radiation is detecting the electrical properties of the human body.

The Applicant argues the 35 U.S.C. 103 rejections of claim 1-12, 14, 15 and 19-22 at pages 16-18. The Applicant argues that Buono does not follow "that elevated temperature naturally indicates dehydration". The Examiner disagrees and respectfully refers the Applicant to the abstract of Buono where it is specifically stated that "whole body sweat rate is determined for each exercise bout" which is a hydration state. While the initial hydration rate may be know, the disclosure of Buono nevertheless establishes measuring hydration after exercise in the two different temperature environments and comparing these results to several factors including temperature. The results from Buono need not be "reversed" as stated by the Applicant, because hydration is simply an additional factor determined by Buono alongside bloodflow and heartrate. Buono explicitly recites a relation between temperature and hydration under the *Whole-body sweat rate* section where "the greatest whole-body sweat rate was found during the hot-euhydrated trail" and goes on the list several other results of hydration due to the environmental temperature.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN P. DOUGHERTY whose telephone number is (571)270-5044. The examiner can normally be reached on Monday-Friday, 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Sean P. Dougherty/
Examiner, Art Unit 3736

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736